SHELKUNOV N.G.

| Acc. Nr: AP0049792 | Abstracting Service: CHEMICAL ABST.5-70 | Ref. Code: 4/R CV83 | 2 |

101747r **Modification of poly(vinyl chloride) fibers by alkyl-chlorosilanes.** Vol'f, I. A.; Besprozvannykh, A.; Podlesskaya, N. K.; Klimenko, I. B.; Shelkunov, N. G.; Grachev, V. T. (USSR). *Khim. Volokna* 1970, (1), 76-7 (Russ). Poly(vinyl chloride) (I) fibers were given water repellency by dehydrochlorination in the presence of FeCl, or diazoaminobenzene (II) catalyst followed by treating with Me,SiCl (III), Me,SiCl, (IV), or MeSiCl, (V) to give modified I having increasing Si content with increasing double bond content and amt. of Cl in the silanes. I fibers were dehydrochlorinated in the free state with 6% II and alc. by heating 18-20 hr at 90-100° or in the fixed state at 130° for 10-18 hr with II or 0.5-1 hr with 20% FeCl, soln. After removing from the catalyst bath (with bath ratio 40) and drying to 3-7% catalyst add-on, the fibers were impregnated with the silanes, e.g. with a bath contg. 2-10% V (bath ratio 30) for 10-15 min at 20°; heated in air 2-5 hr at 90-130°; extd. for 1 day with benzene, and washed 5 times with H₂O or 1.5 times with steam to give I with 0.2-2% Si. Si content increased with increasing silane concn. in the bath, temp., and length of treatment. Although V gave the highest Si content, V gave the best water repellency as detd. by contact angle measurements. Si addn. to I was by Si-O-C bonds as well as by Si-C bonds.   BCJR

REEL/FRAME
19801714

7

USSR

UDC: 621.371.332.3

BABAYEV, A. B., LOGACHEV, V. P., PARFENT'YEV, V. N., FEDOROV, V. A., SHELO-MANOVA, G. P.

"Some Problems of Reflection of a Frequency-Modulated Signal From Forest Cover"

Translation: Using an experimental model of a radio altimeter with frequency modulation (waveband of 7 cm, deviation of 100 MHz, width of the polar diagram at half power in both planes 25-30°), the authors studied the errors in measurement of flight altitude over a forested surface. The experiments were done over hills of various heights with different types of trees. A singularity was found in the signal reflected from the forest -- beats with two maxima showed up in the signal spectrum. The error in altitude measurement depending on the density and height of forest cover is determined. Three illustrations. N. S.

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USSR   UDC: 629.78.015.4

SHELOMOV, N. A. and PARSHIN, V. M.

"On Calculation of Shells With Null Gauss Curvature Under Boundary Load on Part of the Perimeter"

Translation: Investigation is conducted on the possibility of applying the calculation method of zero-moment state and boundary effect to the determination of stress-strain condition of shells with null curvature, loaded normally to the shell along part of the perimeter of the transverse section. A cantilever conical shell is treated as an example (1 illustration, resume).

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USSR

UDC: 629.78.015.4

KHARUN, N. M. and SHELOMOV, N. A.

"Stressed State of System Near the Point of Application of Concentrated Transversal Force"

Translation: The application of combined system calculation method to the stress analysis of a structure, consisting of a very thin shell, two elastic end frames and a perfectly rigid column is investigated. The structure is loaded by a concentrated transversal force applied to the frame. Solution of a specific problem by means of a BESM-4 computer is presented (2 illustrations, 1 table, 5 references, resume).
1/1

1/2   018   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--THE EVOKED POTENTIALS FROM THE RETICULAR FORMATION OF THE MEDULLA
   OBLONGATA AND THEIR CHANGES UNDER CORTICOFUGAL INFLUENCES -U-
AUTHOR--SHELTSYN, L.K.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL69, NR
   5, PP 3-6
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MEDULLA, BIOPOTENTIAL, ELECTROPHYSIOLOGY, CAT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0011   STEP NO--UR/0219/70/069/005/0003/0006

CIRC ACCESSION NO--AP0120711
                    UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0120711

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE AIM OF THE PRESENT REPORT IS
  TO DESCRIBE TYPICAL EVOKED POTENTIALS FROM THE RETICULAR FORMATION OF
  THE CAT'S BRAIN. THEIR CHANGES OCCUR UNDER THE INFLUENCE OF INCREASED
  CONDITIONED CORTICAL STIMULATION AND THE EVOKED POTENTIALS THRESHOLDS IN
  THE RETICULAR FORMATION TO STIMULATION OF DIFFERENT CORTICAL AREAS.
    FACILITY: THE CHAIR OF NORMAL PHYSIOLOGY OF THE LUMUMBA FRIENDSHIP
  UNIVERSITY MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 539.192

LANDAU, M.A., SHELUCHENKO, V.V., DUBOV, S.S.

"Structure and Reactivity of Phosphorus Compounds With P=O Bond"

Moscow, Zhurnal Strukturnoy Khimii, Vol 11, No 3, 1970, pp 513-519

Abstract: Calculations were made of 25 molecules of organophosphorus compounds (OPC) of the (XYZ)PO type (where X, Y, Z - R, OR, SR, NR_2, and F) by the simple method of molecular orbitals. Results found afforded elucidation of several experimentally established details of the mechanism of OPC reactions with nucleophilic and electrophilic reagents. It was also found possible to compare quantitatively calculated energies of the lowermost unfilled orbital and nucleophilic superdelocalizabilities of the phosphorus atom with rate constants and energies of activation of alkaline hydrolysis of different fluoro-anhydrides of phosphorus acids. A quantitative relationship between the total of Taft inductive constants of substituents X, Y, and Z and the total energies of the pi-system of the OPC molecule was found. A relationship was established between the energy of resonance and the total bond orders of the OPC molecule, on the one hand, and the size of the chemical shift of the P^{31} nucleus in a nuclear magnetic resonance spectrum, on the other.

1/1

USSR

IVANENKO, V. I., SHELUDCHENKO, L. M., Institute of Cybernetics, Academy of Sciences of the UkrSSR

UDC   62-551.43:517.27

"An Optimalizing Continuous-Action Controller"

Translation: Existing optimalizing controllers contain an amplifier, integrator, control object, and module for computing the increment in the controlled quantity all connected in series, the output of the integrator being connected to the input of a module for computing the increment in the controlling action. The disadvantages of these devices are their complexity, low speed, and low accuracy in the area of the extremum. The purpose of the invention is to simplify the controller and increase its speed and precision in the area of the extremum. This goal is achieved in the proposed device by adding an approximation module made in the form of two channels, each of which contains an inverter, a diode, and an electromagnetic relay all directly connected. Two fixed contacts of the relay

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USSR

IVANENKO, V. I., SHELUDCHENKO, L. M., USSR Author's Certificate No 324610

are connected to the input and output of the amplifier respectively, and the movable contact is connected to a potentiometer. The movable contact is tied to the input of an adder which is common to both channels. The inputs of the two amplifiers in the approximation module are connected respectively to the outputs of the module for computing the increment in the controlled quantity and the module for computing the increment in the controlling action. The input of the adder in the approximation module is connected to the input of the controller amplifier.

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USSR

SHELUD'KO, G. A.

UDC 51

"Hybrid Gradientless Search for an Extremum in Nonlinear Programming Problems With Difficult Functions and Constraints"

Manuscript deposited in VINITI, No 4537-72, Dep., 4 July 1972, Khar'kov Affiliate of the Institute of Engineering Heat Physics of the Academy of Sciences UkrSSR, Khar'kov, 1972, 18 pp, ill., 10 ref. (from RZh-Matematika, No 11, Nov 72, Abstract No 11V420 DEP)

Translation: The author constructs a hybrid method the components of which are effective modifications of the most rapid descent method, the minimum method, the A. A. Abramov method, and others. The method is divided into two levels: the first is a search for the extremum in a two-dimensional manifold using both the prehistory and the cumulative situation of the motion at the boundary or in the region, the minima of a function, etc., and is directed toward economy of gradient calculations; the second is a prediction of the global motion of the minimum path on the set of particular minima. The transition from one level to another and also a change in search strategy on the first level is achieved by controlling logic functions defined on the set of criteria of the changing situation. A step is adapted

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USSR

SHELUD'KO, G. A., Manuscript deposited in VINITI, No 4537-72, Dep., 4 July 1972, Khar'kov Affiliate of the Institute of Engineering Heat Physics of the Academy of Sciences UkrSSR, Khar'kov, 1972, 18 pp, ill., 10 ref.

to a change in the nature of the function on the basis of a law leading to a region (containing the target) of given dimensions in a finite number of stages. Authors' abstract.

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USSR

UDC: 51

SHELUD'KO, G. A.

"Hybrid Nongradient Search for an Extreme in Problems of Nonlinear Programming with Functions and Limitations Difficult to Calculate"

Gibridnyy Bezgradientnyy Poysk Ekstremuma v Zadachakh Nelineynogo Programmirovaniya Pri Trudnovychislimykh Funktsii i Ogranicheniyakh [English version above], Khar'kov, 1972, 18 pp (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V420 Dep, by the author)

Translation: A hybrid method is constructed, the components of which are effective modifications of swiftest descent, the gully method, the method of A. A. Abramov and others. The method is divided into two levels: the first level is search for the extreme of a two-dimensional manifold, using both the prehistory and the developing situation of motion at the boundary or in the area ("gulliness" of the function, etc.), designed to conserve calculation of gradients, while the second level involves prediction of the global motion of the point by the gully method in the set of partial minima. The transition from one level to another,

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USSR   UDC: 51

Shelud'ko, G. A., Gibridnyy Bezgradientnyy Poysk Ekstremuma v Zadachakh Neliney
nogo Programmirovaniya Pri Trudnovychislimykh Runktsii i Organicheniyakh, Khar'-
kov, 1972, 18 pp

as well as changes in search strategy in the first level, are made by the logic
control functions, defined in the set of characteristics of the changing situa-
tion. The step is adapted to changes in the nature of the function using a rule
leading in a finite number of steps to an area (containing the goal) of fixed
dimensions.

2/2

1/2   043   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--FREQUENCY MULTIPLICATION MODE OF OSCILLATION IN GALLIUM ARSENIDE
   SAMPLES -U-
AUTHOR-(03)-SHELUDKO, N.A., RYKOV, V.V., SESTROVETSKIY, B.V.

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNIKA I ELEKTRONIKA, VOL. 15, APR. 1970, P. 859,860

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FREQUENCY MULTIPLICATION, MICROWAVE OSCILLATOR, FREQUENCY
   STABILITY, GALLIUM ARSENIDE, ELECTRON DENSITY, HARMONIC OSCILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1472   STEP NO--UR/0109/70/015/000/0859/0860

CIRC ACCESSION NO--AP0118461
                          UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0118461   PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A MICROWAVE OSCILLATOR ARRANGEMENT IN WHICH IT IS POSSIBLE TO ATTAIN A TRANSITION TO STABLE EMISSION AT THE SECOND, THIRD, AND FOURTH HARMONICS WITH POWER LEVELS COMPARABLE TO THAT AT THE FUNDAMENTAL FREQUENCY (0.5 TO 1 GHZ). EXPERIMENTS WERE CONDUCTED WITH G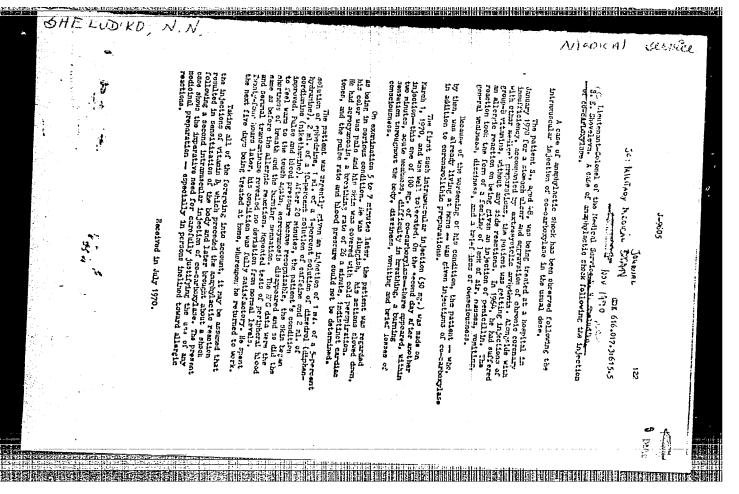ALLIUM ARSENIDE SAMPLES FROM 100 TO 200 MICRONS IN LENGTH AND WITH AN ELECTRON CONCENTRATION OF ABOUT 10 TO THE 15TH POWER PER CU CM. A MOVING PISTON ARRANGEMENT IS USED FOR TUNING, AND SPECTROGRAMS OF FUNDAMENTAL AND HARMONIC EMISSIONS ARE SHOWN FOR ILLUSTRATION.

UNCLASSIFIED

SHELUD'KO, N. N.

Medical Service

J-9605

To: Military Medical Journal

Military Medical Journal   Nov 1970   UDK 616.017.3:615.5   12

G. E. Shevelyova. A case of anaphylactic shock following the injection of co-carboxylase.

A case of anaphylactic shock has been observed following the intramuscular injection of co-carboxylase in the usual dose.

The patient S., aged 46, was being treated at a hospital in January 1970 for a stomach ulcer and aggravation of chronic coronary insufficiency, accompanied by extrasystolic arrhythmia. Alongside with other medical preparations, the patient was getting injections of grouped vitamins, without any side reactions. In 1964, he had suffered an allergic reaction on being given an injection of penicillin. The reaction took the form of a feeling of lack of air, nausea, vomiting, general weakness, dizziness, and a brief loss of consciousness.

Because of the worsening of his condition, the patient — who, by then, was already living at home — was given injections of co-carboxylase, in addition to coronarolithic preparations.

March 1, 1970, and was well tolerated. On the second day after another injection — this one of 100 mg. of co-carboxylase — there appeared, within two minutes, acute weakness, difficulty in breathing, a burning sensation throughout the body, dizziness, vomiting and brief losses of consciousness.

On examination 5 to 7 minutes later, the patient was regarded as being in serious condition. He was sluggish, his actions slowed down, his color was pale and his skin was covered with cold perspiration. He had acrocyanosis, a breathing rate of 26 a minute, indistinct cardiac tones, and the pulse rate and blood pressure could not be determined.

The patient was urgently given an injection of 1 ml. of a 5-percent solution of ephedrine, 1 ml. of a 1-percent solution of diuretol (diphen-hydramine [nikethamide]). After 20 minutes, the patient's condition improved. Pulse and blood pressure became recognizable, the skin began to feel warm to the touch again, acrocyanosis disappeared and so did the shortness of breath and the burning sensation. The ECG data were the same as before the allergic reaction. Repeated tests of peripheral blood and general transaminase revealed no deviation from normal levels. Twenty-four hours later, his condition was fully satisfactory. He spent the next five days being treated at home, whereupon he returned to work.

Taking all of the foregoing into account, it may be assumed that the injections of vitamin B₁ which preceded the anaphylactic reaction resulted in sensitization of the body and later brought about a shock following a second intramuscular injection of co-carboxylase. The present case shows the imperative need for carefully justifying the use of any medicinal preparation — especially in persons inclined toward allergic reactions.

Received in July 1970.

USSR

TYUSHEV, V. S., KONDRATOV, A. V., TIMOFEYEV, Yu. V., SHELUD'KO, O. V.,
Northwest Polytechnical Correspondence Institute

"A Wide-Band Ultrasonic Delay Line"

Translation: This Author's Certificate introduces a wide-band ultrasonic
delay line whose ultrasonic channel is made in the form of a piezoelectric
plate with damper devices on the ends of the plate and with metallic
input and output electrodes vaporized on the plate. Connected between
the input and output electrodes is a feedback circuit which contains a
wide-band pulse generator. To extend the range of the delay time, a slave
pulse generator is connected in the feedback circuit. This pulse gener-
ator is controlled through a switching device from a coincidence gate.
The outputs of a time delay pickup and a pulse counter are connected to
the input of the coincidence gate. One input of the pulse counter is con-
nected to the output electrodes of the ultrasonic channel, while the other
is connected to the coincidence gate. The delayed signal is taken off
from the output of the coincidence gate. Resumé.
1/1

USSR

PATEREU, S. G. and SHELUD'KO, O.

"Probability Algorithm of MGUA with Successive Separation of Input Characteristics"

Translation: A new algorithm is developed for classification (pattern recognition) of Bayes type with successive complication of decision functions, effective with great dimensionality of the space of input characteristics and relatively small number of interpolation nodes. The input characteristics are assumed statistically independent. It is shown that in certain cases a recognition algorithm trained with a finite sample will provide greater accuracy when only a portion of the input characteristics are used than when all are presented. It is constructed on the basis of the theory of statistical decisions which, as we know, is the optimal-accuracy apparatus for pattern recognition with an infinitely long learning sample. The transition from statistically dependent input characteristics to independent characteristics is made using their orthogonalization relative to each other. The algorithm suggested is used for optimal diagnosis of poisoning with four classes of pesticides.

Author's view

1/1

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USSR

UDC 576.868.8

SHELUD'KO Yu. M. and KOZAR, F. Ye.

"The Intracellular Development of Phytopathogenic Viruses"

Abstract: This work is a survey of modern data on the intracellular develop-
ment of phytopathogenic viruses. Facts which give an idea of the various
stages of this process are considered: penetration of the source of infection
into the cell release of viral RNA from the coat proteins, transportation of
viral RNA that has passed into the cell, the place of synthesis of viral RNA
and protein, and the assembling of the viral particles and their migration be-
tween cells. The role of various cellular organelles in the biosynthesis of
plant viruses and the changes in the ultrastructure of the plant cell under
the influence of a viral infection are examined. The following problems are
also considered: the place and form of localization of viral masses in the
cell, pathological changes in cellular organelles, and the ultrastructure of
X-bodies and other inclusion bodies. To a considerable extent the authors
present their own previously published electron microscope research on ultra-
structural changes in the plant cell caused by the replication of some phyto-
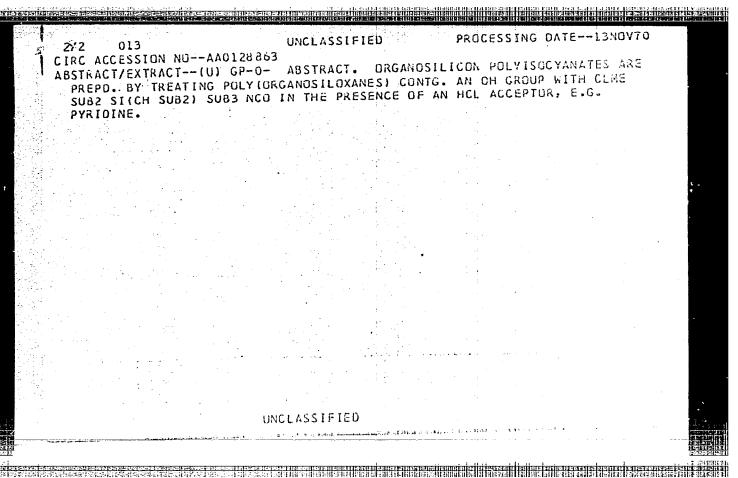pathogenic viruses.

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USSR

UDC 576.858.8

SHELUD'KO, Yu. M.

"Complex Viruses of Plants and Some Aspects of the Universality of Virus Infections"

Abstract: This article is a survey of the literature up to 1967, including material on seldom-studied plant viruses, which are distinguished by the complexity of their structure and composition, as well as by their ability to multiply in both plant and animal tissues. An attempt is made to classify them. The 15 viruses that have been studied the most in this respect have been assigned by viral morphology to the following phytopathogenic groups: large spherical viruses, oblong viruses with rounded ends, bacilliform viruses, and oval viruses. The universality of viral infections is analyzed in the article.

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UNCLASSIFIED   PROCESSING DATE--13NOV70

1/2   013
TITLE--ORGANOSILICON POLYISOCYANATES -U-

AUTHOR-(05)-BORODAVCHENKO, YE.S., SOBOLEVSKIY, M.V., NOVITSKIY, E.G.,
    SEVERNYY, V.V., SHELUDYAKOV, V.D.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,880
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ORGANOSILICON COMPOUND, ORGANIC ISOCYANATE, CHEMICAL PATENT,
    SILOXANE, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1464   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128863
                        UNCLASSIFIED

CIRC ACCESSION NO--AA0128863
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ORGANOSILICON POLYISOCYANATES ARE
  PREPD. BY TREATING POLY(ORGANOSILOXANES) CONTG. AN OH GROUP WITH CLME
  SUB2 SI(CH SUB2) SUB3 NCO IN THE PRESENCE OF AN HCL ACCEPTOR, E.G.
  PYRIDINE.

UNCLASSIFIED

100802t Transformations of compounds having the Si-N-C-X-bonding system. New process for preparing organic and organo-silicon isocyanates. Mironov, V. E.; Sheludyakov, V. D.; Kozyukov, V. P. (USSR). Dokl. Akad. Nauk SSSR 1970, 190(1), 110-13 [Chem] (Russ). Reaction of 96.6 g allylamine with 79.4 g Me₃SiHCl in Et₂O with cooling gave 51% $HSiMe_2NHCH_2CH:CH_2$ (I), b. 99-100°, d^{20} 0.7704, n_D^{20} 1.4162, and 31 g residual $(HSiMe_2)NCH_2CH:CH_2$, b_{15} 45-6°, 0.8277, 1.4344. I and H_2PtCl_6 catalyst in iso-PrOH heated 10-15 hr up to 215° gave a polymer, which in MePh was phosgenated at -20°, then at room temp., to yield 62.2% $ClSiMe_2(CH_2)_3NCO$, b_3 75-6°, 1.0444, 1.4528, which with H_2O gave 79% $O[SiMe_2(CH_2)_3NCO]_2$, $b_{1.5}$ 131-2°, 0.9980, 1.4489. Reaction of liq. $COCl_2$ similarly with 1,3-bis(γ-trimethylsilylamino)propyldimethylsilylpropane gave 73% 1,3-bis(γ-isocyanopropyldimethylsilyl)propane, $b_{1.5}$ 175-8°, —, 1.4708, while $Et_2MeSi(CH_2)_3NHSiMe_3$ and $COCl_2$ similarly gave 66.5% γ-diethylmethylsilylpropyl isocyanate, b_2 57-8°, 0.8963, 1.4478, which with aq. NH_3 gave $Et_2MeSi(CH_2)_3NHCONH_2$, m. 106-7°. Similarly were run reactions of $COCl_2$ with $MeNHSiEt_3$, $MeN(SiMe_3)_2$, $MeNHSiMe_2NMeSiMe_2NHMe$, $CH_2:CHCH_2NHSiMe_3$, and $RNHSiMe_3$ where R was iso-Bu or Ph. These were best run with 5-10% excess $COCl_2$.

G. M. Kosolapoff

REEL/FRAME
19801812

USSR   UDC 536.77:534

BUZHDAN, YA. M., KOLOTOV, YA. L., SHELUDYAKOV, YE. P., Institute
of Thermal Physics, Siberian Department, Academy of Sciences of
the USSR, Novosibirsk

"Method of Thermodynamic Matching of Acoustic Data With P-v-T
Data"

Abstract: A thermodynamic method is proposed for relating the
speed of sound in matter on low frequencies to temperature,
specific volume and pressure. The described procedure can be
readily extended to combined processing of P-v-T and caloric
data, as well as to some other instances of combined processing
of different types of thermodynamic information.

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Forming

USSR   UDC 621.771.2

SICHEVOY, A. P., ROSENTAL', F. YE., TOKMAKOV, A. M., and SHENGUR, Yu. P.,
Candidates of Technical Sciences

"Increased Production and Quality of Periodical, Large-Diameter Rolling Profiles"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 5, Sep-
Oct 70, pp 26-29

Abstract: A review is made of the operation of the first 120 three-roller mill
for rolling periodical profiles. The technological process and production plan
developed by the All-Union Scientific-Research Institute of Metallurgical Machi-
nery is described. Operational deficiencies are cited and the new rolling mill
stand developed by members of the Institute is described.

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UNCLASSIFIED   PROCESSING DATE--17JUL70

TITLE--HETEROCYCLIC NITRO COMPOUNDS. II. ALKYLATION OF NITRO DERIVATIVES
  OF 1,2,4,TRIAZOLE -U-

AUTHOR--BAGAL, L.I., PEVZNER, M.S., SHELUDYAKOVA, N.I., KERUSOV, V.M.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 265-8

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HETEROCYCLIC NITROGEN COMPOUND, ALKYLATION, ORGANIC AZOLE
  COMPOUND, ORGANIC SULFUR COMPOUND, SULFATE, METHOXY COMPOUND, AROMATIC
  NITRO COMPOUND, THIN LAYER CHROMATOGRAPHY, CHROMATOGRAPHIC SEPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/1793   STEP NO--UR/0409/70/000/002/0265/0268

CIRC ACCESSION NO--AP0100369
                    UNCLASSIFIED

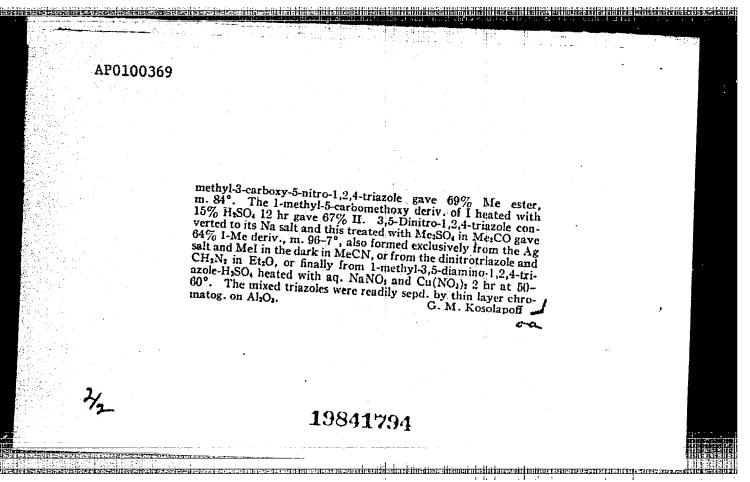111384j Heterocyclic nitro compounds. II. Alkylation of nitro derivatives of 1,2,4-triazole. Bagal, L. I.; Pevzner, M. S.; Sheludyakova, N. I.; Kerusov, V. M. (Leningrad. Tekh- nol. Inst. im. Lensoveta, Leningrad, USSR). Khim. Geterotsikl. Soedin. 1970, (2), 265–8 (Russ). Methylation of 3-nitro-1,2,4- triazole (I) and its analogs with Me_2SO_4 in alkali occurs at the 1- position, while CH_2N_2 gave mixed products with Me in the 1- and 2-positions. I (2 g) in Me_2CO treated with 6 ml 10% NaOH and 2.2 g Me_2SO_4 and the mixt. kept 8 hr gave 66% 1-Me deriv. (II) of I, m. 63–4°. Similarly prepd. was the 1,5-di-Me deriv. (III) of I, 55%, m. 89–90°, while the 5-carbomethoxy deriv. of I gave its 1-Me deriv., 51%, m. 120–1°. Treating, in dioxane, the appropriate I analog with 50% excess CH_2N_2 in Et_2O gave: from I, 76% II and 24% 1-methyl-5-nitro-1,2,4-triazole; from the 5-Me deriv. of I, 64% III and 36% 1,3-dimethyl-5-nitro-1,2,4- triazole. No N^4-substitution was found. Adding 6.5 g 1,3-di- methyl-5-amino-1,2,4-triazole-H_2SO_4 in 5% H_2SO_4 at 0° to 30 g $NaNO_2$ in H_2O and keeping the mixt. 0.5 hr gave 52% 1,3-di- methyl-5-nitro-1,2,4-triazole, m. 55–6°; similarly was prepd. 3- nitro-4,5-dimethyl-1,2,4-triazole, m. 66–7°. CH_2N_2 and 1-
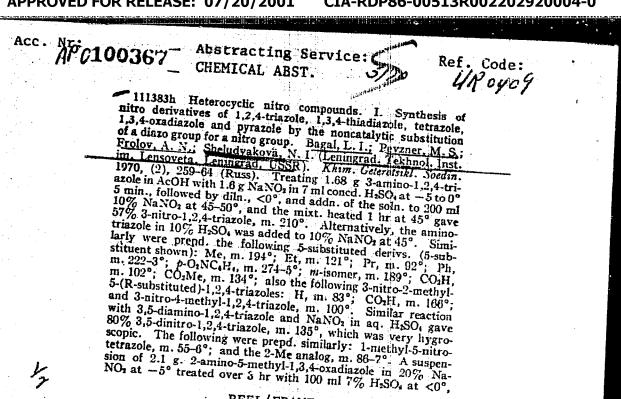
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AP0100369

methyl-3-carboxy-5-nitro-1,2,4-triazole gave 69% Me ester, m. 84°. The 1-methyl-5-carbomethoxy deriv. of I heated with 15% H_2SO_4 12 hr gave 67% II. 3,5-Dinitro-1,2,4-triazole converted to its Na salt and this treated with Me_2SO_4 in Me_2CO gave 64% 1-Me deriv., m. 96–7°, also formed exclusively from the Ag salt and MeI in the dark in MeCN, or from the dinitrotriazole and CH_2N_2 in Et_2O, or finally from 1-methyl-3,5-diamino-1,2,4-triazole-H_2SO_4 heated with aq. $NaNO_2$ and $Cu(NO_3)_2$ 2 hr at 50–60°. The mixed triazoles were readily sepd. by thin layer chromatog. on Al_2O_3.

G. M. Kosolapoff

19841794

111383h Heterocyclic nitro compounds. I. Synthesis of nitro derivatives of 1,2,4-triazole, 1,3,4-thiadiazole, tetrazole, 1,3,4-oxadiazole and pyrazole by the noncatalytic substitution of a diazo group for a nitro group. Bagal, L. I.; Pevzner, M. S.; Frolov, A. N.; Sheludyakova, N. I. (Leningrad. Tekhnol. Inst. im. Lensoveta, Leningrad, USSR). Khim. Geterotsikl. Soedin. 1970, (2), 259-64 (Russ). Treating 1.68 g 3-amino-1,2,4-triazole in AcOH with 1.6 g NaNO$_2$ in 7 ml concd. H$_2$SO$_4$ at -5 to 0° 5 min., followed by diln., <0°, and addn. of the soln. to 200 ml 10% NaNO$_2$ at 45-50°, and the mixt. heated 1 hr at 45° gave 57% 3-nitro-1,2,4-triazole, m. 210°. Alternatively, the aminotriazole in 10% H$_2$SO$_4$ was added to 10% NaNO$_2$ at 45°. Similarly were prepd. the following 5-substituted derivs. (5-substituent shown): Me, m. 194°; Et, m. 121°; Pr, m. 92°; Ph, m. 222-3°; p-O$_2$NC$_6$H$_4$, m. 274-5°; m-isomer, m. 189°; CO$_2$H, m. 102°; CO$_2$Me, m. 134°; also the following 3-nitro-2-methyl-5-(R-substituted)-1,2,4-triazoles: H, m. 83°; CO$_2$H, m. 166°; and 3-nitro-4-methyl-1,2,4-triazole, m. 100°. Similar reaction with 3,5-diamino-1,2,4-triazole and NaNO$_2$ in aq. H$_2$SO$_4$ gave 80% 3,5-dinitro-1,2,4-triazole, m. 135°, which was very hygroscopic. The following were prepd. similarly: 1-methyl-5-nitrotetrazole, m. 55-6°; and the 2-Me analog, m. 86-7°. A suspension of 2.1 g. 2-amino-5-methyl-1,3,4-oxadiazole in 20% NaNO$_2$ at -5° treated over 3 hr with 100 ml 7% H$_2$SO$_4$ at <0°,

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AP0100367

gave 25% 2-nitro-5-methyl-1,3,4-oxadiazole, m. 75°. For this prepn. it was essential to shorten the contact with acids, as 1,3,4-oxadiazoles are unstable in acids. The following I were reported (n shown): 0, m. 256-7°; 1, m. 280-2°; and 2, m. 280-1°. Although 2-aminoimidazole and 2-aminopyridine failed to yield nitro derivs. by this method owing to instability of the diazonium

forms, the results confirmed the previously suggested mechanism for the introduction of the NO₂ group. (B., et al., 1969). The following II were similarly prepd. (Z and R shown): S, H, m. 82°; S, Me, m. 62°; S, Ph, m. 141°; S, o-O₂NC₆H₄, m. 131°; S, p-O₂NC₆H₄, m. 179°; O, Me, m. 75°; and CH₂, H, m. 175°. The yields were 25-76%.

G. M. Kosolapoff

19841790

USSR

UDC 621.43.011:533+621.5:533

BAKHTIGOZIN, SH. KH., NAUMOV, M. S., SHELUKHIN, G. G.

"Calculating a Turbulent Flare at the Wake Boundary"

V sb. 3-y Vses. simpozium po goreniyu i vzryvu, 1971 (Third All-Union Symposium on Combustion and Explosion, 1971--collection of works), Chernogolovka, 1971, pp 126-128 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11B305)

Translation: Some principles of the procedure for calculating the characteristics of a turbulent gas flare during diffusion combustion are discussed. A study was made of two schemes for feeding the components to the combustion chamber: 1) along the chamber axis with axial arrangement of the jets; 2) through jets normal to the chamber axis. The diffusion flare was calculated by the method of the equivalent problem of the theory of thermal conductivity. The solution of the partial differential equations with one sliding limit was found by the approximate Polhausen-Karman method. The temperature and concentration fields along the length of the chamber were calculated. The mean integral gas temperature at the chamber outlet was determined. The calculations were checked experimentally. Using a high-speed movie and the color method, the temperature distribution in the flare was measured and compared with the calculated temperature.
1/1

USSR

UDC 629.629.7.036.54:536.46

SHELUKHIN, G. G. and YUDIN, V. O.

"Investigation of Vortex Flow in a Semienclosed Volume During the Combustion Instability of Condensed Systems"

Translation: Research on vortex flow showed that unsteady combustion in a semienclosed volume of condensed systems and combustion in narrow channels are brought about by the origination of vortex flow, the parameters of which change in time. The origination of vortex flow leads to an increase of the combustion rate and the creation of a considerable moment. Axial blow-off brings about an increase in the combustion stability of condensed systems. An investigation was made of the influence of vortex flow in a semienclosed volume upon the combustion rate and upon the combustion stability of condensed systems.

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USSR   UDC 534.84

SHELUKHIN, M. I.

"A Matrix Method for Calculating Vibration Insulation"

Nauchn. tr. NII stroit. fiz. Gosstroy SSSR (Scientific Works of the Scientific
Research Institute of Structural Physics of Gosstroy USSR), 1970, No 1(13),
pp 95-110 (from RZh-Fizika, No 12(II), Dec 70, Abstract No 12Zh859)

Translation: To determine the dynamic forces transmitted to a support by a
shock absorbing body and characterizing the effectiveness of a vibration insu-
lator, the author solves the problem of the motion of a solid body under the
action of certain restoring forces in the linear approximation with the aid of
a matrix calculation. The kinematics of the motion of the solid are described
by the tensor of the rotation of the coordinate axes T represented in the form
of absolutely and uniformly converging series in any closed interval. The rela-
tionship between the angular momentum and the angular rate of rotation in
a fixed coordinate system is investigated. A general solution of the equation of

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USSR

SHELUKHIN, M. I., Nauchn. tr. NII stroit. fiz. Gosstroy SSSR, 1970, No 1(13),
pp 95-110

motion of the solid body is given along with an equation for determining the
natural oscillation frequencies of the system. Elastic forces of the shock
absorbers and forces of friction acting on the shock absorbing machine in six-
dimensional space are considered. An equation is obtained for the energy of
the motion of the shock absorbing solid involving the work of the exciting
force, the kinetic energy of the system, the work going into overcoming forces
of friction, and the potential energy of the system. Expressions for the poten-
tial and kinetic energy of the system are discussed. V. A. Moor.

2/2

Epidemiology

USSR

UDC 616.912-039-022.6:576.858.13

MARENNIKOVA, S. S., SHELUKHINA, E. M., MAL'TSEVA, N. N., and LADNYY, I. D.,
Moscow Scientific Research Institute of Virus Preparations

"Monkey Pox Virus -- the Agent of a Smallpox-Like Disease in Man"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 468-469

Abstract: After a case of smallpox (boy aged 9 months) was reported from a
remote village in equatorial Congo where, due to vaccination, no smallpox
had occurred during the preceding two years, the patient was taken for special
observation and treatment. The skin eruption, though initially identical with
regular smallpox, subsequently changed, with the vesicles and pustules becoming
polymorphous and developing hermorrhagic points. Exudate collected from the
vesicles was incubated at 35°C on chorio-allantoic membranes of chick embryos,
and a virus was isolated after the first passage. Unlike the standard small-
pox virus, the newly isolated virus displayed strong hemagglutinating and
hemadsorptive activity, induced necrosis after intradermal injection in
rabbits, and caused eruption on the chorio-allantoic membrane even when in-
cubated at a higher temperature (39°C). Additional comparative tests performed
on the newly isolated virus, on smallpox, cowpox, and monkey smallpox viruses,
and on Vaccinia virus established the identity between the newly isolated virus

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USSR

MARENNIKOVA, S. S., et al, Voprosy Virusologii, No 4, Jul/Aug 71, pp 468-469

and monkey smallpox virus. Epidemiological investigation of the village re-
vealed no other cases of this disease. Nor was it possible to establish by
what route the child had contracted the disease. Nevertheless, the results
clearly indicate that monkey smallpox virus is pathogenic for man and causes
a smallpox-like disease in humans.

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SHELYAKHOVSKIY, M.V.

Medical Service

J-9605

UDC 617.5-001.4-089:356.33

50: Military Medical Journal
Nov 1970

12

DECLASS

Questions of organization
of medical facilities for troops;
preparation and education
of medical cadres.

ORGANIZATION OF MEDICAL ASSISTANCE AT EVACUATION STAGES
FOR PATIENTS WITH PENETRATING CHEST WOUNDS

M. V. Sholyakhovskiy, Professor, Colonel, Medical Service

At different periods of the Great Patriotic War, chest wounds
represented from 7 to 12 percent of all injuries. This is
also approximately the incidence of chest wounds in present-day
warfare. Thus, according to Jones and his associates (1968), the
incidence of chest wounds in the U.S. Army in Korea was 8 percent of
all wounds, and in South Vietnam -- 12.9 percent. Excl (1968) points
out that in 1966, in Vietnam, the incidence of chest wounds among
U.S. Army casualties was 9 percent.

According to a report by A. A. Bocharov (1959), penetrating
injuries represent 42.5 percent of all chest wounds. Open pneumothorax
occurs in 30.9 percent of the cases and closed pneumothorax -- in 68
to 70 percent, with valvular pneumothorax accounting for another 1 to
1.5 percent (P. A. Kupriyanov, 1947). Hemothorax occurs in the case
of practically all chest wounds, except for rare cases of obliteration
of the pleural cavity. To identify it, however, is not nearly always
possible, because a small amount of fluid in the pleural cavity (less
than 200 milliliters) cannot be detected either clinically or by
X-ray. (A. N. Rokulov, 1952). According to the data of A. B. Rusakov
(1960), hemothorax occurs in from 35 to 40 percent of all cases of
penetrating chest wounds in peacetime. According to our own observa-
tions, this figure is 50.2 percent, and -- in the case of bullet wounds --
as much as 82.2 percent. (1965 - 1968). Depending on the amount of
blood lost, hemothorax can be defined as light, medium or severe.
(P. A. Kupriyanov, 1947).

The severe symptom complex arising in the case of chest wounds
is due, first of all, to disturbances in breathing and circulation.
Disturbances in external breathing arise as a result of the pneumo-
thorax and collapse of the lung on the injured side. A decline in the
breathing surface occurs also due to displacement of the medastinum, in
direction of the uninjured lung and the resulting compression of the
latter. An important role is played also by the limitation of breathing
excursions of the chest wall, due to pain in the area of the wound.
As a result of the disturbances in external breathing, the patients
develop a ventilation hypoxemia. At the same time, the severe blood loss
results in a reduced volume of circulating blood, leading to a transport
hypoxemia. All this results in tissue hypoxia. Affected first are those
tissues which are the most sensitive to oxygen deficiency -- specifically,
the cerebral cortex -- and miocardia. Disturbances of the heart, its
vascular system are aggravated by displacement of the cardio-
compression by the outpouring of blood, twist in major blood vessels,
and the absence of negative intrapleural pressure.

Considering the pathogenesis of the pathological shifts arising
from penetrating chest wounds, it would seem useful to modify somewhat
and to complete -- the existing classification of such wounds as formu-
lated during the Great Patriotic War (A. A. Bocharov, 1950). Besides

J-9605

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These obligations are now being successfully fulfilled. Thus methods of biochemical analysis of the blood has developed and adopted in practice new training session, held jointly with the blood. At a one-day garrison the personnel of the hospital showed its high level of discipline, revealed a profound understanding of its duties and received the appraisal rank of "good." A high mark was received also by the tactical-special sessions carried out under the slogan: "A high level of field training is our test gift to the 24th Congress of the CPSU!"

Communists are extending active assistance to the komsomol and professional union organizations in their work of preparing for the congress. On 2 October 1970, with the active participation of the party organization, members of the komsomol held a Lenin training session under the title: "Let's learn about Communism according to Lenin's teaching!" The session was attended both by older communists and by members of the Komsomol in their 20's and 30's.

The communists and the entire personnel of the Kalinin military hospital are determined to complete with honor the year 1970 — year of our own dear Communist party.

USSR

UDC 669.236

SAVITSKIY, Ye. M., GORINA, N. B., POLYAKOVA, V. P., and SHELYAKIN, L. B.

"Use of the Method of Ion Bombardment to Determine Fine Structure of Noble Metals"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 60-62

Translation: The use of the method of ion bombardment is used to determine the fine structure of ruthenium single crystals. The fine structure is determined on prismatic planes of the crystal. A comparative estimate is made of the etching pictures observed. The possibility is shown of using this method to determine the structure of the noble metals. 5 Figures; 10 Bibliographic References.

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Acc. Nr: *AP0037232*   **S**   Ref. Code: UR 0391

PROBLEMS OF INDUSTRIAL HYGIENE IN THE PRODUCTION OF HIGH-GRADE COMMERCIAL GLASS

Suponitskiy, M. Ya.; Shelyfman, F. M.; Zelentsova, S. P.;
Faktorov, I. Ye.; Tupchiy, Ye. P.; Voloshina, E.I.; Levin, M. V.

Summary

Pollution of atmospheric environment with arsenous acid anhydride. lead. manganic oxide and other substances is possible in production of high-grade commercial glass. Workers engaged in the latter are, at the same time. exposed to the effect of infrared radiation, elevated air temperature, noise, vibration. They demonstrate physiological shifts of thermoregulation and and the incidence of affections implicating cardiovascular system, digestive organs, etc is elevated among them. The authors suggested a number of measures aimed at improving hygienic conditions of work, some of which had been implemented.

D.A.

REEL/FRAME
19730157

2

Corrosion

USSR

UDC 676.01:54

PERLIN, Yu. I., VALIYEVA, R. A., and SHELYGOVA, M. S., Engineers

"Chemical Resistance of Faolite and Graphitoplast ATM-1 in an Environment of Polyvinyl Chloride Synthesis"

Moscow, Khimicheskoye i Neftyanoye Mashinostroyeniye, No 5, May 70, pp 26-27

Abstract: When the method of liquid-phase hydrochlorination of acetylene, developed by the All-Union Scientific Research and Planning Institute for Monomers (Tula), is used for the synthesis of polyvinyl chloride, the equipment is exposed to highly corrosive media. The presence of gaseous hydrogen chloride and hydrochloric acid in the medium, as well as the elevated temperature regime, almost completely rule out the possibility of using metals and their alloys for manufacture of the equipment so that there is interest in the use of nonmetallic materials. The article describes results of a study of the resistance of Faolite and graphitoplast ATM (antegmite) under hydrochlorination. Standard-shape specimens were cut out mechanically for the tests from presolidified Faolite sheet and ATM-1 cake (State All-Union Standard 4650-65). It was found that tubes of graphitoplast ATM-1 can be used to manufacture a reactor with a diameter of up to 150 mm since this material provides
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USSR

PERIN, Yu. I., et al, Khimicheskoye i Neftyanoye Mashinostroyeniye, No 5, May 70, pp 26-27

good heat exchange through the wall. Casting graphitoplast ... can be used for larger reactor diameters, or the reactor lined with ATM-1 cake. It is recommended that equipment operating at a normal temperature, as well as reactor covers exposed to gas media, gas conduits for hydrogen chloride and vinyl chloride, pipes and pipe fittings, be made of Faolite.

2/2

USSR

UDC 547.964.3

SHELYKH, G. I., VLASOV, G. P., and MITIN, Yu. V., Institute of High Molecular
Compounds, Acad. Sc. USSR, Protein Institute Pushchino

"Synthesis of Peptides by Means of Derivatives of Arenesulfenic Acids and
Trivalent Phosphorus Compounds. IV. Synthesis Using Water-Soluble Reagents"

Abstract: A series of trivalent phosphorus derivatives with P-N, P-C, and
P-O bonds, containing a labile amino group was synthesized. It was shown
that they could be used with bis-(p-dimethylaminophenyl) disulfide in the
synthesis of peptides. The use of tris-(p-dimethylaminophenyl)phosphine
leads to chromatographically pure peptides in good yields, requiring no
special purification steps. The synthesis of peptides by this method may
be carried out with derivatives of serine, thyrosine, aspargine, and
glutamine without the preliminary protection of functional groups. The
degree of racemization was determined by the Anderson test.

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SHEMANOVA, G. F.

JPRS 56030
18 May 72

EFFECT OF SYNTHETIC CARBOHYDRATES ON RAT LIVER LYSOSOMES

Abstract: The effect of synthetic carbohydrates on rat liver lysosomes was examined. Since the carbohydrates were purified from contaminants they lost their toxicity for lysosomes.

One of the most important problems in medicine is the regeneration of space flights. In the laboratory carbon dioxide can be utilized through the stage of formaldehyde condensation, leading to the formation of 10-13 optically inactive monosaccharides, primarily pentoses and hexoses (Butlerov; Akerlof; Pfeil and Ruckert; A. M. Kuzin; Yu. Ye. Sinyak and V. A. Uspenskaya). It is not impossible that the racemates of carbon dioxide obtained as a result of this synthesis can serve as one of the sources of a diet for cosmonauts. Accordingly, it was necessary to conduct a toxicological investigation of these carbohydrates.

The toxicity of synthetic carbohydrates was studied in rat liver lysosomes, using the structure of the cell measuring from 0.2 to 0.8 μ containing hydrolytic enzymes. Cell hydrolases are morphologically separated by a lipoprotein membrane. An increase in permeability or the destruction of this membrane leads to a freeing of the enzymes, an increase in their activity in the cell, and therefore to one pathological state or another. Among the factors increasing the entry of lysosomal enzymes into the cell are many toxins, vitamins, antibiotics, exposure to transverse accelerations, etc. (Bernheimer and Schwartz; Tarnawski; A. M. Kharitonova and A. A. Avakyan; Kh. Kh. Planell, yes, et al.). It was precisely the high sensitivity of lysosomes to exposure to different factors and their role in processes of a pathological or physiological drying out of cells that was the basis for selecting lysosomes as an object for studying the toxicological effect of synthetic carbohydrates.

- 46 -

USSR   UDC: 66.076.001.12+002.2

BOGDANOV, S. V., PANAZDYR', V. V., SIKIRYAVYY, V. Ya., SUBBOTOVSKIY, D. Kh.,
SHEMARIN, V. N.

"Selection of Design and Thermal Insulation of Covers for Underground Compressed Gas Containers"

Moscow, Stroitel'stvo truboprovodov, No. 8, 1972, pp 16-18

Abstract: Underground isothermal containers for storage of compressed methane may use various structural versions of covers. The two most frequently encountered in world practice, the spherical cover and the standard roof with sealing base, are studied in this article. Analysis shows that the standard roofing with sealing base is more economical than the spherical roofing, due largely to the lower capital investments required. Comparison of two types of insulation of this cover indicate that they are equally economical.

1/1

SHEMARINA, L.I.

AA0047096

Soviet Inventions Illustrated, Section II Electrical, Derwent,

UR 0482

2/70

244504 AUTOMATIC INDUCTANCE METER FOR TESTING PIEZO-
ELECTRIC RESONATORS contains master harmonic
generator (1), wide band amplifier (2) whose amplif-
ication factor is automatically changed by regulator
(3), four-terminal resistance network (4) to which
is connected piezoelectric resonator to be tested
(not shown), automatic frequency trim circuit con-
sisting of wide band amplifiers (5) and (6), sampling
phase inverter (7) and phase detector (8). Pulse
oscillator (9) changes the phase of sampling phase
inverter (7). One input of ratiometer (10) is
connected to input of resistance network (4) through
amplitude detector (11) and amplifier of harmonic
signal (12). The second input of ratiometer (10)
is connected to input of amplifier (12) through
converter circuit of connected in series peak
detector (13), impulse amplifier (14) and frequency
detector (15). The scale of ratiometer (10) is
suitably graduated for direct reading the dynamic
inductance of piezoelectric resonator.
12.6.68 as 1246963/26-9.V.F.IVANCHIN.et al(7.10.69)
Bul 18/28.5.69. Class 21e. Int.Cl.G 01r.

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4

AA0047096

AUTHORS: Ivanchin, V. F.; Shkinderov, Ye. G.; Leytush, M. L.; Shemarina, L. I.; Dvoryantsev, N. V.

19790584

Radiation Chemistry

USSR

UDC 541.15

BOROVKOVA, V. A., BAGDASAR'YAN, Kh. S., CHEPEL', D. V., SHEMAROV, F. V.,
Institute of Physical Chemistry imeni L. Ya. Karpov

"Pulse Radiolysis of Polymethylmethacrylate Containing Aromatic Compounds"

Abstract: The formation of ions during pulse radiolysis of solutions of tri-phenylamine, biphenyl, naphthalene in polymethylmethacrylate (M) at $300°K$ was investigated. The spectrum of the pure polymer is at least partially due to captured electrons; in the presence of CCl_4 its optical density decreases. Triphenylamine solutions exhibit the spectrum of its cation-free radical $(A+)$. The spectra obtained in the presence of biphenyl and naphthalene are also due to the cation-free radicals of the admixtures. During radiolysis of poly-methylmethacrylate for periods shorter than 10^{-6} sec, cation-free radicals of the admixture are formed: $M+ + A \rightarrow M + A+$. This process competes effectively with the primary recombination of matrix charges $M+ + e^- \rightarrow M$ as a consequence of the electron-acceptor properties of the matrix. Reaction $A+ + e^- \rightarrow A^*$ is slow for the same reason. The radiation source was a linear accelerator pro-viding 4 MeV electrons at 4 microsec. pulse duration. The results confirm previously proposed mechanisms of polymer radioprotection.

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USSR

UDC 624.07:534.1

PISARENKO, G. S., SHEVCHUK, A. D., BOGINICH, O. Ye., SHEMEGAN, A. A.

"On the Problem of Studying Energy Scattering in a Material Under High-Frequency Oscillations"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sisten (Energy Scattering Under Oscillations of Mechanical Systems -- Collection of Works), Kiev, "Nauk. dumka", 1972, pp 41-50 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V265)

Translation: A computational-experimental method is presented for determining the decrement in damping in a material under high-frequency vibrations. The basic idea of the method is that in the test process the resonance frequency shift of the sample is measured for different vibration amplitudes. The coefficients of the approximating polynomial showing the damping decrement as a function of stresses are determined from the resulting resonance skeleton curve. A sample calculation is given. 6 ref. I. Sh. Rakhmatulin.

1/1

USSR

PISARENKO, G. S., BOGINICH, O. Ye., SHEMEGAN, A. A.

UDC 539.3:534.1

"Calculation of Energy Scattering in Transverse Vibrations of Square Metal Plates With Damping Coatings and Loaded With a Concentrated Load"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sistem (Energy Scattering in the Vibrations of Mechanical Systems -- Collection of Works), Kiev, "Nauk. dumka", 1972, pp 20-38 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V232)

Translation: An equation is obtained for the forced vibrations of a square plate with damping coatings loaded by a concentrated load and induced by a harmonic force considering the nonlinearity of scattering of energy in the coating material. This equation describes vibrations of an equivalent single-layer plate with a load where the scattering of energy in the material is subject to empirically established relationships for a plate with damping coatings. By expanding the solution in terms of powers of the small parameter and using as a null approximation the solution of the problem of oscillations of hinge-supported plates with a load, the authors obtain first approximation formulas for the construction of an amplitude resonance curve. Calculations

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USSR

PISARENKO, G. S., et al, Rasseyaniye energii pri kolebaniyakh mekh. sistem, Kiev, "Nauk. dumka", 1972, pp 20-38

are given for a square plate (of D16ATV aluminum alloy) with a load in the center coated with textovinite. The calculated results are compared with experiment. 6 ref. Yu. G. Balakirev.

2/2

Acc. Nr:

AP0045917

Abstracting Service: 5/70   Ref. Code:
INTERNAT. AEROSPACE ABST.   UR3663

A70-22463 #   Study of the durability of turbine blade alloys
and structural elements under cyclic heating conditions (Issledovanie
vynoslivosti turbolopatochnykh splavov i konstruktivnykh elementov
v usloviiakh termotsiklirovaniia). V. T. Troshchenko, B. A. Griaznov,
Iu. M. Shemegan and E. G. Konopliannikov (Akademiia Nauk
Ukrainskoi SSR, Institut Problem Prochnosti, Kiev, Ukrainian SSR).
Problemy Prochnosti, vol. 2, Jan. 1970, p. 19-25. 11 refs. In Russian.
    Study of the effect of a cyclic heating accompanied by large
changes in thermal stresses, on the fatigue strength and durability of
heat resistant alloys EI612, and ZhS6-K. An expression is derived for
calculating the durability of heat resistant alloys when subjected to
thermal cycles.

Z.W.

ALS

REEL/FRAME
19780962

18

Radiation Chemistry

USSR

UDC 544.6:546.65

SHEMELEVA, G. G., BAGDASAROV, K. N., and STEPANENKO, Yu. V.,
Rostov-NA-Donu State University

"New Extraction-Photometric Method for Determining Uranium in Minerals"

Abstract: Uranium may be selectively extracted from a solution of uranium nitrate using tributyl phosphate (TBP) and CCl_4, resulting in a 90% yield. The U(VI) is reacted with p-nitrophenylfluorone (NPF) and the solution analyzed photometrically. Cadmium, zinc, molybdenum (VI), vanadium (V), iron (III), lanthanum, thorium, and zirconium -- in concentrations 1600, 500, 200, 200, 100, 50, 50, and 25 times that of U(VI) respectively -- did not interfere with the photometric determination of the U-NPF complex. This technique was applied to analyzing for U in carnotite; relative error was +2% for amounts of U ranging from 150 to 450 micrograms.

1/1

USSR

KOLGANOV, G. S., MATUKHNO, G. G., TUPITSA, V. I., PORKHUN, V. G.,
SHEMET, G. A., OMES', N. M.

"Improvement of the Technology of Production of Type 07T1 Steel"

Abstract: . The Krivorog Metallurgical Plant has begun producing type 07T1
steel to replace type KOM steel for the manufacture of bailing wire. The
new steel is made in 130-ton converters by the standard technology for
manufacture of killed steel, with the maximum quantity of slag run off
after completion of blowing. The remaining slag is thickened by addition
of 1-1.5 t lime. The metal is tapped at a carbon content of 0.06-0.9%, at
1590-1605° C. The metal is deoxidized in the ladle with titanium sponge or
ferrotitanium. During teeming of the steel, when the adjustable head is
1/2 full, liquid aluminum is added to the surface of the metal. The intro-
duction of this step to the technology has reduced total reject rate for
07T1 steel from 1.50 to 0.45%. The quantity of nonmetallic inclusions in
the metal is not increased.

1/1

Instrumentation and Equipment

USSR

UDC 669.71.472(088.8)

SHMYG, Yu. V., Irkutsk Branch of All-Union Scientific Research and Planning
Institute of Aluminum, Magnesium and Electrode Industry

"Device for Suspension of Anode of Aluminum Electrolyzer With Lateral
Current Supply"

USSR Author's Certificate No 287318, Cl. 40c 3/02, 40c 3/12, (C 22 d 3/02,
C 22 d 3/12), filed 11 Jun 69, published 30 Mar 71 (from RZh-Metallurgiya,
No 1, Jan 72, Abstract No 1G128P)

Translation of Abstract: This device for suspension of the anode of an
aluminum electrolyzer with lateral current supply, which includes a fastening
wedge, is unique in that, in order to lower labor inputs for anode suspension,
riase the quality of the Al obtained, and improve sanitary and hygienic work-
ing conditions, it is made in the form of two grips symmetrically placed on
parallel axes, facing in opposite directions and secured in working position
by a wedge connected with a drive for reciprovating travel. Three illus-
trations.

1/1

UNCLASSIFIED   PROCESSING DATE--13NOV70

TITLE--DETERMINATION OF THE HYDROGEN CONTENT IN COPPER ALLOYS -U-

AUTHOR-(02)-SHEMETEV, G.F., LEBEDEV, K.P.

COUNTRY OF INFO--USSR

SOURCE--LITEINOE PROIZVOD. 1970, (3), 29-30

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL ANALYSIS, HYDROGEN, COPPER ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1923   STEP NO--UR/0128/70/000/003/0029/0030

CIRC ACCESSION NO--AP0132185
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0132185   UNCLASSIFIED   PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN INSTRUMENT IS DESCRIBED FOR
DETN. OF H IN CU ALLOYS IN WHICH UP TO 20 SPECIMENS CAN BE LOADED AT ONE
TIME AND THEN THROWN ONE BY ONE INTO A SN BATH AT 750DEGREES KEPT UNDER
VACUUM, (1.0-1.5) TIMES 10 PRIME NEGATIVE3 MM HG, WHERE THE TESTED ALLOY
DISSOLVES COMPLETELY GIVING UP A HIGHER AMT. OF H THAN POSSIBLE IN THE
USUAL VACUUM EXTN. AT 700DEGREES (SIMILAR TO 10PERCENT MORE PER VOL. OF
GASES EXTD. IN VACUUM). AT THE SAME TIME THE DURATION OF THE ANALS. IS
15-20 MIN, I.E. ABOUT 3-4 TIMES SHORTER THAN IN THE USUAL VACUUM EXTN.
METHOD (WITHOUT A BATH).

UNCLASSIFIED

Acc. Nr: AP0047240

PRIMARY SOURCE: Urologiya i Nefrologiya, 1970,
PP 20-26

Ref. Code: UR 0606

ENZYMATIC DIAGNOSIS OF CHRONIC PYELONEPHRITIS

V. D. Shemetov

Summary

A number of enzymes were examined in the urine and blood serum of 64 patients suffering from chronic pyelonephritis. Enzymogram consisted of 9 tests. The extent of changes of enzymatic activity under study depended on the stage of the disease. In chronic pyelonephritis at the stage of exacerbation increased activity of enzymes in the blood was revealed in 26 patients, and in the urine — in 19 cases. In latent pyelonephritis the activity of the enzymes was elevated only in 16 of 29 cases; 9 more patients displayed a rise of enzymatic activity after a provoking prednisolone test. No elevation of enzymatic activity was seen at the terminal stage of the disease.

REEL/FRAME

19790747

DI 2

USSR

UDC 621.375.82

SIVERS, V. N., SHEMSHURA, V. Ye., and YUGAS, B. S.

"Determination of Density of Excited States in Three-Level Medium With Allowance for Multiple Light Scattering"

Translation: The authors consider the interaction of high-power monochromatic radiation with a three-level medium with equidistantly spaced energy levels. The medium is represented in the form of a one-dimensional array of scattering centers. With allowance for multiple light scattering in the medium, expressions are obtained which define the densities of scattering centers in states with energies E_1, E_2, and E_3. Stimulated emission is taken into account in the solution. The problem is considered under steady-state conditions. The density values of scattering centers make possible calculation of light conditions at any point in the medium. The results obtained are illustrated graphically.

1/1

USSR

UDC:621.165-226.2-752

BORISHANSKIY, K. N., SHEMTOV, A. Z., Leningrad

"Peculiarities of Oscillations of Turbine Power Blades Related to the Use of Variable-Step Diaphragms.

Kiev, Problemy Prochnosti, No 10, Oct 73, pp 43-50

Abstract: The peculiarities of resonant oscillations of turbine blades arising when so-called variable-step diaphragms are used, are studied. A method is suggested and an example presented of the calculation of such diaphragms. It is shown that the dynamic stresses in the blades can be decreased by 1.5-2 times with a deviation in the step of the guide blades by but a few percent. The influence of oscillation decrement on the effectiveness of utilization of variable-stepped diaphragms is studied.

1/1

USSR   UDC 621.165-226.2-752

SHEMTOV, A. Z., BORISHANSKIY, K. N., (Leningrad)

"Some Peculiarities of the Oscillations of Turbine Blade Wheels with Couplings
Closed into a Circle"

Abstract: The peculiarities of oscillations of blades in the final stages
of powerful stationary steam turbines resulting from the use of couplings
forming a complete circle around the outer portions of the blades are
studied. The boundary conditions are presented for determination of the
natural oscillating frequencies of the blades when connected by so-called
damper wires. Using blades of constant cross section as an example, pheno-
mena arising in case of variations in the partial frequencies of blades in
a set are studied.

1/1

TITLE--MASS SPECTROMETRIC DETERMINATION OF AMINO ACID SEQUENCES IN
PEPTIDES. XV. FRAGMENTATION OF PEPTIDES CONTAINING MONOAMINO

UNCLASSIFIED

PROCESSING DATE--16OCT70

AUTHOR-(05)-SHEMJAKIN, M.M., OVCHINNIKOV, YU.A., KIRYUSHKIN, A.A.,
MIROSHNIKOV, A.I., ROZYNOV, B.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 443-60

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINO ACID, PEPTIDE, ESTER, MASS SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1254

CIRC ACCESSION NO--AP0107730

STEP NO--UR/0079/70/040/002/0443/0460

UNCLASSIFIED

CIRC ACCESSION NO--AP0107730   UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MASS SPECTRA WERE TABULATED FOR 17
PEPTIDES WITH ASPARTIC AND GLUTAMIC RESIDUES IN VARIOUS POSITIONS,
EXAMD. IN THE FORM OF ME OR TERT-BU ESTERS AT THE TERMINAL CO_2 H.
SUCH PEPTIDES HAVE RELATIVELY HIGH VOLATILITY. THE MASS SPECTRA SHOWED
THE USUAL AMINO ACID TYPE OF CLEAVAGE ALONG WITH LOSS OF ELEMENTS OF THE
ALC. OF THE ESTER AND OF THE RO_2 C GROUP.   FACILITY: INST.
KHIM. PRIR. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

UDC 619:614.9-07:637.5:612-086

USSR

GLADKOV, I. M., Candidate of Veterinary Sciences, SHIRYAYEVA, A. P., and
SHEMYAKIN, G. V., Rostov Meat Processing Plant and North Caucasus Branch
of All Union Scientific Research Institute of the Meat Industry

"Effect of Size of Meat Portion on Contamination With Microbes"

Abstract: The total number of microbes in 1 g of meat taken from a portion
originally weighing 20 g was much larger than in samples from portions
weighing 1, 5 , 10, or 15 g. The isolability of microbes (E. coli) from a
portion of meat ground in a mortar by hand was greater than from the same
amount of meat ground in an RT-1 tissue pulverizer (8000 rpm for 5 min).
The pulverizer had no effect on the viability of the microbes. Use of the
pulverizer requires little physical effort and it precludes additional con-
tamination by the microflora of the material being examined because the
grinding is done in a tightly covered container.

1/1

USSR

UDC 621.385.632

SHEMYAKIN, L. V.

"On the Choice of Parameters for Individual Forecasting of the Life of Low-Noise Traveling-Wave Tubes"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 1, pp 40-47 (from RZh--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A136)

Translation: The problem is considered of the choice of parameters for low-noise TWT which it is necessary to monitor in the period of monitoring tests for individual forecasting of the life and reliability of these TWT. It is shown that with monitoring of one parameter, this parameter must be the cathode current (emission current). Preferably, three parameters are measured: the cathode current, the noise factor, and the time for readiness. A device is proposed which makes it possible to perform automatic monitoring of these parameters. As the result of monitored tests of three parameters of a TWT over the course of 200 hours, it is possible to accomplish forecasting of the life over the course of more than 2000 hours. 1 ref. Summary.

1/1

TITLE--FREE SUBUNITS OF RNA POLYMERASE IN NORMAL AND PHAGE INFECTED CELLS
   OF E. COLI -U-
AUTHOR-(04)-BOGDANOVA, YE.S., ZOGRAF, YU.N., BASS, I.A., SHEMYAKIN, M.F.

COUNTRY OF INFO--USSR

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 3, PP 435-444

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ESCHERICHIA COLI, PHAGE, RNA, ENZYME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0306   STEP NO--UR/0463/70/004/003/0435/0444

CIRC ACCESSION NO--AP0122567
                            UNCLASSIFIED

CIRC ACCESSION NO--AP0122567
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADDITION OF SUPERNATANTS
OBTAINED AFTER ULTRACENTRIFUGATION (5.5 HOURS; 300,000 G) OF THE
NONINFECTED CELLS LYSATES OF E. COLI (STRAINS B, 3.050, TS 19) RESULTS
IN A SHARP INCREASE OF ACTIVITY OF THE HEATED E. COLI RNA POLYMERASE.
THIS ACTIVATION IS CONNECTED WITH SMALL PARTICLES (SIMILAR TO 3-5S) AND
IS ELIMINATED BY ANTIBODIES AGAINST PURIFIED E. COLI RNA POLYMERASE.
THE INCREASE OF ACTIVITY OF THE HEATED ENZYME IS, THEREFORE, DUE TO THE
PRESENCE OF THE SMALL COMPONENT OF POLYMERASE IN THE ULTRACENTRIFUGATES
THAT MAKES POSSIBLE THE RECONSTRUCTION OF THE ENZYME FROM THE SMALL AND
THE LARGE SUBUNITS. THE ULTRACENTRIFUGATE OF E. COLI B CELLS INFECTED
WITH THE PHAGE T2 OR T4 OR WITH AN AMBER MUTANT N122 OF PHAGE T4, AS A
RULE, DOES NOT ACTIVATE THE HEATED ENZYME. MOREOVER, IT SIGNIFICALLY
INHIBITS THE RNA SYNTHESIS CATALYZED BY THE MIXTURE OF THE HEATED ENZYME
AND THE ULTRACENTRIFUGATE FROM NONINFECTED CELLS, BUT DOES NOT AFFECT
THE ACTIVITY OF THE NATIVE RNA POLYMERASE. INHIBITION IS NOT OBSERVED
IN THE CASE WHEN THE RECONSTRUCTED ENZYME HAS ALREADY BEGUN TO
SYNTHESIZE RNA BEFORE THE ADDITION OF THE ULTRACENTRIFUGATE FROM
INFECTED BACTERIA. THE DATA OBTAINED MAKE IT POSSIBLE TO CONCLUDE THAT
THE LYSATES OF THE INFECTED CELLS CONTAIN INHIBITOR WHICH SPECIFICALLY
PREVENTS RECONSTRUCTION OF ACTIVE RNA POLYMERASE FROM ITS LARGE AND
SMALL SUBUNITS. THE SUM OF RESULTS INDICATES THAT A MECHANISM OF
REGULATION OF RNA POLYMERASE ACTIVITY MAY EXIST IN THE CELL, THAT ACTS
ON THE LEVEL OF ASSOCIATION OF THE LARGE AND SMALL SUBUNITS OF THIS
ENZYME.   FACILITY: INSTITUTE OF ATOMIC ENERGY, USSR, MOSCOW.

UNCLASSIFIED

UNCLASSIFIED

TITLE--CONFORMATIONS OF MEDIUM DEPSIPEPTIDE RINGS. II. VIBRATIONAL SPECTRA
AND DIPOLE MOMENTS -U-

AUTHOR-(05)-ANDREYEVA, L.I., IVANOVA, T.M., YEFREMOV, YE.P., ANTONOV,
V.K., SHEMYAKIN, M.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2) 475

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEPTIDE, DIPOLE MOMENT, EXCITED STATE, MOLECULAR INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1415

STEP NO--UR/0079/70/040/002/0475/0480

CIRC ACCESSION NO--AP0112409

UNCLASSIFIED

CIRC ACCESSION NO--AP0112409

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA OF 8 KNOWN
DEPSIPEPTIDES AND THEIR DIPOLE MOMENTS SHOWED THAT THESE 10, 11, AND 12
MEMBERED RING SYSTEMS EXHIBIT VARIATION OF CIS TRANS FORMS THAT DEPENDS
ON RING SIZE AND SUBSTITUENT STRUCTURE. IN THE 10 MEMBER RING THE
CONFORMATIONS REALIZED ARE THOSE FAVORING INTRAMOL. INTERACTION OF AMIDE
AND ESTER GROUPS AND THE POSSIBILITY OF TRANSANNULAR INTERACTION IS
REALIZED IN THE EXCITED STATE; THESE EFFECTS ARE MUCH WEAKER IN THE
LARGER RING SYSTEMS. THE DIPOLE MOMENTS OF THESE PEPTIDES RANGE FROM
3.4D TO 4.9D.

UNCLASSIFIED

TITLE--MASS SPECTROMETRIC DETERMINATION OF AMINO ACID SEQUENCES IN
  PEPTIDES. XIII. FRAGMENTATION OF PEPTIDES CONTAINING ASPARAGINE AND
AUTHOR-(05)-SHEMYAKIN, M.M., OVCHINNIKOV, YU.A., KIRYUSHKIN, A.A.,
  MIROSHNIKOV, A.I., ROZYNOV, B.V.
COUNTRY OF INFO--USSR

SOURCE--ZH. OBSCH. KHIM. 1970, 40(2), 407-29

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEPTIDE, ASPARAGINE, GLUTAMIC ACID, AMINE DERIVATIVE, MASS
  SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/2017   STEP NO--UR/0079/70/040/002/0407/0429

CIRC ACCESSION NO--AP0120660
                            UNCLASSIFIED

2/2   014
CIRC ACCESSION NO--AP0120660
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MASS SPECTRA WERE TABULATED FOR 2
PEPTIDES CONTG. ASPARAGINE AND GLUTAMINE PORTIONS IN VARIOUS PARTS OF
THE CHAIN, AND EXAMD. IN THE FORM OF ME OR TER-BU ESTERS. SUCH PEPTIDE
WERE DECOMPD. BY ELECTRON IMPACT MAINLY ALONG THE LINES OF AMINO ACID
TYPE FRAGMENTATION, ACCOMPANIED BY ELIMINATION OF NH SUB3 AND
CARBOXAMIDE GROUP.   FACILITY: INST. KHIM. PRIR. SOEDIN., MOSCOW
USSR.

UNCLASSIFIED

USSR   UDC 612.8.014.45

SHEMYAKIN, O. S., Kiev

"Effect of Extraloud Pulsed Noise on Certain Divisions of the Central and
Peripheral Nervous Systems"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 11, Nov 70, pp
19-23

Abstract: Rabbits and guinea pigs were exposed 1 to 40 times to pulsed noise
ranging from 135 to 155 db and lasting 0.8 to 1.6 sec. Noise at intensities
above 150 db produced pronounced histochemical and morphological changes in
the nerve cells of the medulla oblongata, brainstem, spinal cord, interver-
tebral ganglia, etc. Signs of degeneration, chromatolysis, contraction of
cytoplasm, alterations in content and redistribution of nucleic acids and
thiol groups were observed. Repeated noise at intensities of 142 to 145 db
caused similar but reversible biochemical shifts which disappeared after 12
to 15 days. A single exposure to such noise had no effect on the nerve
cells whatsoever.

1/1

Inorganic Compounds

MASLENNIKOVA, I. S., and SHEMYAKIN, V. N.

"The Metal Complexes of o-Aminophenylarsonic Acid"

Abstract: Complexes of o-aminophenylarsonic acid (HL) were prepared from $CoCl_2$, $NiCl_2$, $CuCl_2$, $CuBr_2$, $Cu(NO_3)_2$, $CuSO_4$, $Cu(acetate)_2$, $ZnCl_2$, $CdCl_2$, $CdBr_2$, and CdI_2. Although the ligand may coordinate with the central atom through either of two groups, analysis of the IR spectra in the N-H vibration range (about 3200 to 3450 cm^{-1}) indicates that N is the bond donor. Other parameters measured were the N-H bond length - 1.01 A, the H-N-H bond angle - 113°, the overlap interval I_s - 0.6474, and the additional positive charge on the N - from 0.38 to 0.65 with most of the values around 0.44.

1/1

116343g Infrared spectra of complexes of methylamine and
ethylamine with cupric chloride. Konovalov, L. V.; Maslenni-
kova, I. S.; Shemyakin, V. N. (USSR). Zh. Neorg. Khim.
1970, 15(2), 571-2 (Russ). The ir absorption max. of N-H
shifted to lower frequencies on coordination of MeNH$_2$ or EtNH$_2$
to CuCl$_2$. CuCl$_2$.2MeNH$_2$.2HCl and CuCl$_2$.2EtNH$_2$.2HCl (I)
had ν(CuN) at 580 cm^{-1} and νCuCl at 312 and 294 cm^{-1}, resp.
When I was prepd. in alc. instead in aq.-alc. soln., a strong new
(not yet assigned) band appeared at 228 cm^{-1}.   HMJR .

REEL/FRAME
19841252

USSR

KULIKOV, A. V., SHEMYAKIN, Ye. A., BUSHINA, S. S., GORYUNOV, A. S.,
All-Union Scientific Research Institute of Geophysical Prospecting Methods

"A Method of Geoelectric Prospecting"

Translation: This Author's Certificate introduces a method of geoelectric
prospecting using induced polarization by measuring the phase frequency
characteristics of the overall electric field created by grounded sources
of a harmonic polarizing field. As a distinguishing feature of the patent,
the depth and resolution of the method are improved under the conditions
of low-resistance geoelectric sections by measuring the phase character-
istics with the supply and reception lines at acute and obtuse angles to
one another. The angle between the lines is varied until the low-frequency
part of the phase characteristic becomes dependent on this angle, and the
presence of polarized objects is judged by the phase angles on the low
frequency.
1/1

USSR

PSHENICHNIKOV, V. I., SHEMYAKIN, Yu. V.

"A Pulse Generator Based on Dischargers"

Translation: The schematic circuit is worked out and a pilot model is made of a pulse generator based on type R-24 controllable dischargers. This pulse generator provides a pulse voltage of 10-20 kV across the load at a pulse current of 1000-1500 A with a prf of up to 10 Hz. Operation of the pulse generator is based on the method of repeated voltage multiplication. A pulse generator circuit based on controllable dischargers can be used for supply to pulse radars and in other investigations. The generator has small overall dimensions low weight, and low cost. Resumé.

1/1

USSR

GUBIN, V. Ye., ISUPOV, Yu. G., ORESHINA, M. D., KHAZIYEV, N. N., SHEMYAKINA,
G. N.

"Free Convection in a Horizontal Cylinder"

Tr. VNII po Sboru, Podgotovke i Transp. Nefti i Nefteproduktov [Works of
All-Union Scientific Research Institute on the Collection, Preparation and
Transportation of Oil and Petroleum Products], No 8, 1971, pp 104-116,
(Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No
4 B647 by Ye. M. Zhukhovitskiy).

Translation: Free, unstable convection in an infinite horizontal circular
cylinder is studied. The wall temperature of the cylinder is maintained con-
stant and differs from the temperature of the fluid. The temperature dif-
ference and size of the cavity are assumed sufficiently great that convection
occurs in the boundary-layer mode. The problem is solved on the assumption
of quasistability of the process: it is considered that the structure of the
flow is determined at a given moment in time by the instantaneous temperature
difference between the walls and the fluid and is independent of the rate of
change of temperature with time.
     The equations for planar, stable convective motion in the boundary layer
approximation are solved by the Karman-Polhausen method. Laminar and turbu-
1/2

UR

JUBIN, V. Ye., ISUPOV, Yu. G., ORESHINA, M. D., KHAZIYEV, N. N., SHEMYAKINA, G. N., Tr. VNII po Sboru, Podgotovke i Transp. Nefti i Nefteproduktov, No 8, 1971, pp 104-116.

lent flow modes are studied. The velocity and temperature are approximated by polynomials. The Reynolds analogy is used in the turbulent case. The solution of the nonlinear systems of equations for the velocity and thickness of the boundary layer is produced by the method of power series using a longitudinal coordinate. Furthermore, an analytic solution in the area of large Prandtl numbers is found in the laminar case. The boundary layer characteristics and heat flow through the surface of the cylinder are calculated.

Results are presented from an experimental study performed using two models with diameters of 30.5 and 97.5 cm and lengths of 15 and 27 cm respectively. The working fluids were gasoline and distilled water. Processing of the experimental data produced on heat transfer produces the dependence $N = 0.340 \ (GP)^{0.25}$ in the laminar case and $N = 0.092 \ (GP)^{0.40}$ in the turbulent case (Nusselt number N and Grashoff number G defined through diameter of cylinder and temperature difference between wall and fluid; P is the Prandtl number). Heating time of the fluid is estimated.

2/2

USSR

ORESHINA, M.D., SAVEL'YEVA, L.I., KHAZIYEV, N.N., SHEMYAKINA, G.N. (Ufa)

"Free Convection of a Fluid With an Initial Vertical Density Gradient,
With Heating on the Side"

Abstract: Some results of experimental research on free convection in
solutions with nonuniform density with respect to height are presented.
shown that in the presence of a vertical density gradient and side heating,
the convective motion in solution is of a cellular character. The relati
of the height of individual cells to the temperature pressure and the densi
gradient is ascertained. 2 figures, 5 bibliographic entries.

1/1

- 66 -

UNCLASSIFIED   PROCESSING DATE--20NOV70

1/2   011
TITLE--DESTRUCTIVE HYDROGENATION OF TRIALKYLACYLOXYSILANES --U-

AUTHOR-(05)-BOLOTOV, B.A., ORLOVA, T.V., KHARITONOV, N.P., SHENBERG, N.N.,
BATYAYEV, YE.A.
COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 823-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROGENATION, ORGANIC SILANE, METAL CATALYST, CARBOXYL
RADICAL, NICKEL, CHROMIUM OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1161   STEP NO--UR/0079/70/040/004/0823/0827

CIRC ACCESSION NO--AP0123583
                        UNCLASSIFIED

2/2   011
CIRC ACCESSION NO--AP0128503
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROGENOLYSIS OF RSUB3 SIO SUB2
CR PRIME1 WITH R SELECTED FROM ME, ET OR PR AND R PRIME1 FROM ET, PR,
BU, C SUB5 H SUB11 OR C SUB6 H SUB13, AT 200-300DEGREES 20-250 ATM OVER
RANEY NI OR NI-CR OXIDE CATALYSTS OCCURS AT THE C-O BOND WITH
TRANSFORMATION OCCURRING MAINLY AT THE CARBOXYL GROUP. THE DISILOXANE
PRODUCT IS FORMED BY DEHYDRATION OF THE RESULTING R SUB3 SIOH IN CONTACT
WITH THE ACID. THE PRIMARY ALC. AND CARBOXYLIC ACID FORMED IN SUCH
TRANSFORMATIONS ALSO REACT TO FORM THE APPROPRIATE ESTER. SATD.
HYDROCARBONS ARE ALSO FORMED, OWING TO CATALYTIC CONVERSIONS OF THE
ALCS. AND ACIDS OVER NI CATALYST AT SIMILAR TO 300DEGREES. THE REACTION
ALSO GAVE SOME CO, CO SUB2, CH SUB4 AND VARIOUS UNIDENTIFIED OR TARRY
PRODUCTS. RESULTS OF MANY RUNS WERE TABULATED. THUS THE PRODUCTS
INCLUDED R PRIME1 H, R PRIME1 CH SUB2 OH, R PRIME1 CO SUB2 H, R PRIME2
CO SUB2 CH SUB2 R PRIME1 AND (R SUB3 SI) SUB2 O.   FACILITY:
LENINGRAD. GOS. UNIV., LENINGRAD, USSR.

UNCLASSIFIED

USSR

LOBACHEV, V. S., SHENBROT, G. I., Department of Zoology and Comparative Vertebrate Anatomy, Moscow State University

"An Isolated Population of the Great Jerboa Allactaga jaculus (Mammalia, Dipodidae) on the Left Bank of the Syr-Dar'ya River"

Abstract: In the autumn of 1970, the great jerboa was found for the first time on the left bank of the lower regions of the Syr-Dar'ya River, 50 km west of Kazalinsk. The question of how and when the great jerboa penetrated this region remains as yet unsolved. The population of the great jerboa living at this location has been isolated from other populations of the species for a rather considerable period of time, judging by geomorphological and archaeological data (indeed for several centuries, apparently since the Middle Ages).

1/1

USSR

UDC 681.3.002.12:53.083.8

SHENBROT, I. M., Candidate of Technical Sciences

"Design of Industrial Information System as an Optimal Problem"

Moscow, Pribory i Sistemy Upravleniya, No 7, July 1971, pp 1-3

Abstract: The economic criterion in the form of the maximum or equivalent profit has been accepted in all industrial devices. In the process of design, when there is an insufficient amount of initial data or when it is desirable to simplify the calculations, the optimal problem is replaced by an extremal problem with a different criterion or system of equations. This article examines previously used and new modifications of the initial optimal problem of designing industrial information systems and establishes relations between them and the initial problem. Only information systems of operational control are considered, and their efficiency is estimated by their capability of controlling the object. Before establishing the efficiency criteria of information systems, it is necessary to establish the efficiency criteria of the production system in which they operate. The efficiency criteria in designing information systems of operational control is based on the consideration of the initial expenditures for the

1/2

USSR

SHENBROT, I. M., Pribory i Sistemy Upravleniya, No 7, July 1971, pp 1-3

development and servicing of information systems and the losses related to
the imperfection of the system as compared to the ideal. Thus, the design
of an information system must consist of the compilation of a mathematical
model and the optimization of its parameters according to a specific cri-
terion. It is especially difficult to establish the relation of losses to
the system parameters. Therefore, the parameters are divided into the
following characteristics: function, structure, reliability, accuracy,
efficiency, and servicing discipline. The analysis and solution of
problems about the economically optimal parameters are further simplified
if the concepts of errors of information systems are clarified and the
deviations from the ideal systems are established. The examples of error
characteristics include the probability of errors during a given time,
the mean number of failures in a unit of time, the probability of message
distortion, and so on.

2/2

1/2   016   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--CALCULATION OF ACCURACY OF CENTRALIZED CONTROL SYSTEMS -U-

AUTHOR-(02)-SHENBROT, I.M., GINZBURG, M.YA.

COUNTRY OF INFO--USSR

SOURCE--(RESCHET TOCHNOSTI SISTEM TSENTRALIZOVANNOGO KONTROLYA) MOSCOW,
ENERGIYA, 1970, 407 PP
DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, ELECTRONICS AND
ELECTRICAL ENGR.
TOPIC TAGS--HANDBOOK, AUTOMATIC CONTROL SYSTEM, DATA PROCESSING EQUIPMENT,
ACCURACY STANDARD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1743   STEP NO--UR/0000/70/000/000/0001/0407

CIRC ACCESSION NO--AM0130591
                      UNCLASSIFIED

CIRC ACCESSION NO--AM0130591   UNCLASSIFIED   PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE   3.
INTRODUCTION   8.   PART I ACCURACY OF CENTRALIZED CONTROL.   CHAPTER I
ERROR IN CENTRALIZED CONTROL OPERATIONS   10.   II EVALUATION OF
ACCURACY   60.   PART II CALCULATION OF ERRORS IN CONVERSION OF VALUES.
CHAPTER III ERRORS IN CONVERSION INTO A CONTINUOUS SIGNAL   101.   IV
ERRORS IN CONVERSION INTO A DISCRETE SIGNAL   140.   PART III CALCULATION
OF ERRORS IN MEASUREMENT AND CONTROL OF PROCESSES.   CHAPTER V   ERRORS
IN MEASUREMENT AND CONTROL OF PROCESSES   211.   VI CORRECTING
FILTRATION   281.   VII CALCULATION OF INDICATORS   343.   VIII
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UNCLASSIFIED

USSR

KORENBLUM, I. YA. and SHENDER, Ye. F., Institute of Nuclear Physics imeni
B. P. Konstantinov, Academy of Sciences, USSR

"The Influence of Nonmagnetic Admixtures Upon the Curie Temperature of Dilute
Ferromagnetic Alloys"

Abstract: It is shown that when a small concentration of nonmagnetic admixtures
is introduced into dilute ferromagnetic alloys of the PdFe type, the Curie
temperature can be either increased or decreased within wide limits, depending
upon the properties of the admixtures. It is also shown that measurement of the
Curie temperature can provide information as to the state of the nonmagnetic
admixtures in the alloy. 5 references.

1/1

USSR

UDC   621.396.67:624.074

LAPTEV, Yu. P., PUSHKIN, V. N., TIMOKHOV, B. V., SHENDEROV, A. B.

"A Device for Orienting an Antenna With Respect to Azimuth and Polarization"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 5, Feb 72, Author's Certificate No 327545, Division H, filed 11 Sep 70, published 26 Jan 72, p 156

Translation: This Author's Certificate introduces a device for orienting an antenna with respect to azimuth and polarization. The device contains a mechanism for azimuthal rotation fastened on a fixed base, a mechanism for rotation of polarization, and a high-frequency rotating coupler securely fastened to the frame which carries the antenna. As a distinguishing feature of the patent, the overall dimensions are reduced and remote control of antenna orientation is simplified by coupling the output shaft of the polarization rotating mechanism through a differential to the speed reducer of the azimuthal rotation mechanism and through a clutch to the tilting sector regulator. The output shaft of the polarization rotator is coaxial with the movable part of the rotating coupler. The tilting sector regulator is made in the form of a lever-and-linkage mechanism kinematically connected to the azimuthal rotator.

1/1

Microbiology

USSR

UDC 575.123:576.851

IGNATOV, V. V., SHENDEROV, B. A., PANASENKO, V. I., PIDENKO, A. P., and
MAGAGINA, A. N., Saratov State University imeni N. G. Chernyshevskiy,
Saratov

"Elimination of the Genetic Determinants of Resistance in Staphylococcus
aureus Under the Effect of an Intensive Electromagnetic Field"

Abstract: Two strains of Staph. aureus, 33 and 1074, were subjected to the
action of an electromagnetic field with a frequency of 2375 megacycles and
an intensity of 1516 kw. The strains, which had been isolated from patients,
were typical with respect to their microbiological properties. They were
polyresistant to penicillin, tetracycline, chloramphenicol, streptomycin,
erythromycin, mercuric chloride, and albucide. Under the action of the
electromagnetic field, some of the determinants of drug resistance were
eliminated. The effect was due to the action of heat produced by the
electromagnetic waves. A great number of cultures differing with respect
to the determinants of drug resistance that had been eliminated could be
segregated. After being stored for 10 mos in 0.8% Hottinger agar at 4°, the
majority of segregated cultures retained their new type of drug resistance.
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USSR

IGNATOV, V. V., et al., Genetika, Vol 9, No 4, Apr 73, pp 57-61

In some cases, however, there was restoration of some of the lost factors of
drug resistance, but not of all of them. The phenomenon described can be
used for the study of the extra-chromosomal determinants in microorganisms
that are responsible for drug resistance.

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Genetics

USSR

SHENDEROV, B. A., Saratov Medical Institute

UDC 576.8.097.22.095.1

"The Effect of Temperature, pH, and Composition of the Medium on the Transmission of Drug Resistance by Conjugation"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971, pp 94-98

Abstract: The conditions required for transmission of the R factor by conjugation from Shigella flexneri No 170 (2a) to E. coli M-17 were studied. The R factor was transmitted in both acid and alkaline media at pH 5 to 10. The yield of recombinants of E coli that acquired resistance to tetracycline and chloramphenicol was highest at pH 6.5 to 7. Drug resistance was not transmitted at 20°C; 37°C was the optimum temperature. Incubation of a mixture of parent cultures at 42°C decreased the frequency of recombination almost 200-fold. The absence of carbon sources from the medium prevented the formation of antibiotic-resistant E. coli. The R factor was transmitted most frequently in a medium containing, in addition to glucose, dl-aspartic, l-glutamic, and aminoacetic acids and dl-tryptophan. Many fewer recombinants formed in the presence of dl-valine, dl-methionine, dl-leucine, l-arginine, and l-cysteine. The other amino acids, e.g., dl-threonine, dl-lysine, and dl-serine, occupied an intermediate position in this respect.

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USSR

UDC 576.851.49.097.22.095.18:615.281:547.722.5

SHENDEROV, B. A., Saratov Medical Institute

"The Effect of 5-Nitrofuran Derivatives on the Transmission of Drug Resistance by Conjugation"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 77-81

Abstract: 5-Nitrofuran derivatives (hydantoin, solofur, furazolin, nitro-furantoin, furazolidone, nitrofurazone, furacrylin) inhibited to some degree transmission of the episome R-factor from the dysentery 170 R^+ strain to E. coli M-17 R^- at all concentrations of the preparations. The effect was independent of the composition of the medium in which the conjugation was accomplished. The number of drug-resistant recombinants formed was smallest when the nitrofurans were added directly to the conjugating mixture. Pre-liminary culturing of the parent cells in the presence of these agents likewise reduced the frequency of recombination. The inhibitory effect was most pronounced when the donor cells were treated with the drugs. Growing Shigella with episome resistance to antibiotics in the presence of sub-bacteriostatic concentrations of the nitrofurans resulted in elimination of the R-factor.

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Acc. Nr: *AP0101144*

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 3 , pp 247-250

Ref. Code: UR0297

ON THE PROBLEM OF ANTIBIOTIC RESISTANCE TRANSFERANCE

S. I. Sherishorina, B. A. Shenderov
Saratov Medical Institute

A possibility of resistance transferance to levomycetin, tetracycline and neomycins from Zonne and Flexner dysentery bacteria, isolated in the Saratov region, to Coli bacteria during conjugation was shown. The rate of the transferance depended on both the contact time and the individual peculiarities of the parent cultures used in the experiments. The feature of resistance to neomycins was not linked to the features of resistance to tetra- cycline and levomycetin and its presence suppressed the transferance of the latter.

REEL/FRAME
19850770

USSR

SMIRNOV, YE. M., KHEYFETS, YE. I., and SHENDEROV, YE. L.

UDC 534.612

"Quantitative Analysis of Sound Fields, With the Use of a Shadow Visualization Technique"

Abstract: A method is described for measuring the pressure distribution in sound fields, with the use of a shadow visualization technique. A measurement technique is proposed, which takes into account the nonlinear relationship between the pressure in the sound field and the illuminance of its image, as well as the nonlinearity of the characteristic curve of the photographic film. The measurement errors are evaluated. Photographs of sound fields scattered on elastic plates and shells are presented. Distributions of sound pressure in the scattered fields are measured. It is shown that the potentialities of a shadow realization technique are substantially expanded by the use of quantitative analysis. The proposed technique is sufficiently exact for conducting sound-scattering research on models. 12 figures, 2 tables, 12 references.

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SHENDEROV, Ye. L.

WAVE PROBLEMS IN HYDROACOUSTICS

PART II

Translation of Russian-language book by Ye. L. Shenderov:
Volnovyye Zadachi Gidroakustiki, 1972, Sudostroyeniye, Leningrad,
352 Pages.

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CONTENTS (Continued)

CONTENTS (Continued)

USSR

KHEYFETS, Ye. I., SHENDEROV, Ye. L., Leningrad

"Formation of Caustic Curves When Sound Interacts With Shells"

Abstract: The authors consider lines of sound amplification (caustic curves) which arise upon interaction between acoustic waves and shells. Photographs of acoustic fields with caustics of three types are presented. The first type comprises curves due to sound radiation as a consequence of propagation of flexural and longitudinal waves over the shell, the second category is geometric-optic caustics, and the third involves caustic curves of the "whispering gallery" type. The field amplitude close to a caustic is calculated. It is found that the amplitude distribution of acoustic pressure close to the curve is described by an Airy integral. The authors thank Ye. P. Smirnov for assistance in conducting the experiment.

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USSR

LIKHODAYEVA, YE. A., and SHENDEROV, YE. L.

"Peripheral Waves Arising During the Diffraction of a Plane Sonic Wave on a Thin Cylindrical Shell"

Abstract: This article investigates the sonic field in the region of the geometric shadow of an elastic cylindrical shell placed into a liquid. Computational analysis is made of the total field near the surface of the shell. It is shown that a frequency range exists for which the level of the field in the area of the geometric shadow substantially exceeds the field in the shadow of an absolutely soft cylinder. The substantial growth in the level of the field behind the elastic shell is explained by the excitation of weakly attenuating peripheral waves caused by bending oscillations. Different types of peripheral waves propagating around the shell are classified from the Watson transform. Photographs of the field scattered by the elastic shell are obtained on a device for visualizing the sonic fields, thus permitting the velocity of the peripheral waves surrounding the shell to be determined as 1.41·10⁵ cm/sec; this value agrees with the computed values of the velocity
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